The second of the second of the second of



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PIGURE 1

Staphylothermus marinus - F1-12LC

1	ATG																					6
1	Met	Ser	Leu	Asn	Lys	His	Ser	Trp	Met	Asp	Met	Ile	Ile	Phe	Ile	Leu	Ser	Phe	Ser	Phe		2
	CCA																					12
21	Pro	Leu	Thr	Met	Ile	Ala	Leu	Ala	Ile	Ser	Met	Ser	Ser	Trp	Phe	Asn	Ile	Trp	Asn	Asn	-	4
121																						180
41	Ala	Leu	Ser	Asp	Leu	Gly	His	Ala	Val	Lys	Ser	Ser	Val	Ala	Pro	He	Phe	Asn	ren	Gly	-	
181															AAT							240
61	Leu	Ala	Ile	GIA	Gly	He	Leu	IIe	Val	He	Val	Gly	Leu	Arg	Asn	Leu	Tyr	Ser	Trp	Ser .		.8
241															AAC							300
81	Arg	Val	Lys	Gly	Ser	Leu	Ile	He	Ser	Met	Gly	Val	Phe	Leu	Asn	Leu	Ile	Gly	.Val	Phe		100
301															TTT							360
101	Asp	Glu	Val	Tyr	Gly	Trp	Ile	Hıs	Phe	Leu	Val	Ser	Val	Leu	Phe	Phe	Leu	Ser	Ile	lle		120
361																				ATA		420
121	Ala	Tyr	Phe	Ile	Ala	Ile	Ser	Ile	Leu	Asp	Lys	Ser	Trp	Ile	Ala	Val	Leu	Leu	Ile	Ile	, -	140
421															CCG							480
141	Gly	Hıs	lle	Ala	Met	Trp	Tyr	Leu	His	Phe	Ala	Ser	Glu	Ile	Pro	Arg	Gly	Ala	Ala	lle		160 -
481															AGA							540
161	Pro	Glu	Leu	Leu	Ala	Val	Phe	Ser	Phe	Leu	Pro	Phe	Tyr	lle	Arg	Asp	Tyr	Phe	Lys	Şer		180
541				CGA																-		555
181	Tyr	Thr	Lys	Arg	End																	185

Pyrodictium - TAG11-17LC

				-								
1 1											CAT His	60 20
61 21											GGC Gly	120 40
121 41								CGG Arg			CTG Leu	180 60
181 61								GTT Val				240 80
241 81								CCG Pro				30'0 100
301 101								GGC Gly				360 120
361 121								ACT Thr				420 140
421 141								TAC Tyr				480 160
481 161								GGG Gly				540 180
541 181								GGC Gly				600 200
601 201								GCT Ala				660 220
661 221								GTC Val				720 240
721 241								GGG Gly				780 260
781 261								CGC Arg				840 280
841 281								GAG Glu				900 300
901 301								GGC Gly				960 320
961 321								CTG Leu				1020 340
1021 341			GGC Gly									1041 347

FIGURE 3 Archaeoglobus Venificus SN P6-24LC

											1100			-,						- 170	•
1	ATG Met	CCA Pro	TAT Tyr	GTT Val	AGG Arg	AAT Asn	GGT Gly	GGT Gly	GTA Val	TAA nea	ATC Ile	TÁŤ Tyr	TAT Tyr	GAA Glu	CTG Leu	GTG Val	GAT Asp	GGA Gly	Pro	GAG Glu	60 20
61 21										وسودن			,	TO A TO		TGG	AAA	GAG	CAA	'AGA	120 -40
121									s mc	merc.	- Total	CTC	CAT	ממכ	AGA	GGT	CAT	GGC	AGG		180 60
181									m> 0	n.C.N		CNG	አስሮ	TTC	ATT	TCA	GAT	TTA	GAT	GCG	- 24 0 80
61	Asp	Lys	Pro	Leu	Gly	Tyr	Asp	Pne	171	ALY.		orc.	CTC	CGA	САТ	тса	ттс	GĞA	ACA	ATG	300
241 81	Val	Val	Arg	Glu	Thr	GIY	vaı	GIU	Буз			000	COMP		CCT	СТА	ATC	CTC	ATA	GGT	360
301 101	Ile	Ser	Met	Lys	Tyr	cys	ser	GIU	1 7 1	Arg	715.7	*** 3					- :	#31) 1- (.	ol Esta Livi	GGT Gly	e - " - 1"
361 121	GGT Gly	GGG Gly	AGC Ser	AGA	ATA Ile	AAG Lys	CTT Leu	CTA Leu	CAC	AGA Arg	ATT Ile	GGA Gly	TAT	Pro	TTA Leu	GCA Ala	AAG Lys	ATT Ile	Leu	Ala	420 140
421 141	TCC Ser	ATT	GCA	TAC	- AAG Lys	AAG Lys	TCT Ser	TCA Ser	AGA	TTG Leu	GTC Val	GCA Ala	GAT Asp	CTT Leu	TCC	TTT Phe	GGC Gly	AAA Lys	AAT Asn	GCT Ala	480 160
481	GGT Glv	GAA	CTI	r AAA 1 Lys	GAG	TGG Trp	GGA Gly	TGC	AAA Lys	CAG Glr	GCA Ala	ATG	GAT Asp	TAT	ACA Thr	CCC	TCC Ser	TAC	GTG Val	GCA Ala	540 - 180
541										, car	,		CAZ	רממ ב	ATC	TTG	GAC	AA	ATA	GAC Asp	· **
601											· ,·	r cci	\ СТ	ል ፕግና	: ררנ	GTI	AGO	 IAA	TC	GTT Val	660 220
201	Cys	Pro	o Th	r Lei	ı Ile) II (e va.	1 61	, ma		ود د	r care	2 100	ר אדנ	r ccz	A AAC	тсс	GGG	G CAT	TGC	720
661 221	Glu	ı Lei	u Se	r Ar	g Ar	g 110	e 61	u AS		п ъз	T AC	, cc	ת ת	C GA	r gaz	A TTO	AT	г тс	r TC	, A GČA	780
721 241	GT/ Val	A ATO	G CT t Le	T GA u Gl	G AG u Se:	r CC	a AG o Se	r Gl	u Va	l As	n Arg	g Ala	a Me	t As	p Glu	ı Phe	e Il	e Se	r Sei	c Ala	260
781 261			C TA e En																 	-, , , -,	263

Aquifex pyrophilus - 28LC

1	TTG	AGA	TTG	AGG	AAA	TTT	GAA	GAG	ATA	AAC	CTC	GTT	CTT	TCG	GGA	GGA	GCT	GCA	AAG	GGC	60
	Leu	Arg	Leu	Arg	Lys	Phe	Glu	Glu	Ile	Asŋ	Leu	Val	Leu	Ser	Gly	Gly	Ala	Ala	Lys	Gly	20
61	ATA	GCC	CAC	ATA	GGT	GTT	TTG	AAA	GCT	ATA	AAC	GÅG	CTC	GGT	ATA	AGG	GTG	AGG	GCT	TTA	120
21	Ile	Ala	His	Ile	Gly	Val	Leu	Lys	Ala	Ile	Asn	Glu	Leu	Gly	Ile	Arg	Val	Arg	Ala	Leu .	40
121	AGC	GGG	GTG	AGC	GCC	GGG	GCA	ATC	GTT	TCG	GTC	TTT	TAT	GCC	TCA	GGC	TAC	TCC	CCT	GAA	180
41	Ser	Gly	Val	Ser	Ala	Gly	Ala	Ile	Val	Ser	Val	Phe	Tyr	Ala	Ser	Gly	Tyr	Ser	Pro	Glu	60
181	GGG	ATG	TTC	AGC	CTT	CTG	AAG	AGG	GTA	AAC	TGG	CTG	AAG	CTG	TTT	AAG	TTC	AAG	CCA	CCT	240
61	Gly	Met	Phe	Ser	Leu	Leu	Lys	Arg	Val	Asn	Trp	Leu	Lys	Leu	Phe	Lys	Phe	Lys	Pro	Pro	80
241	CTG	AAG	GGA	TTG	ATA	GGG	TGG	GAG	AAG	GCT	ATA	AGA	TTC	CTT	GAG	GAA	GTT	CTC	CCT	TAC	300
81	Leu	Lys	Gly	Leu	Ile	Gly	Trp	Glu	Lys	Ala	Ile	Arg	Phe	Leu	Glu	Glu	Val	Leu	Pro	Tyr	100
301	AGG	AGA	ATA	GAA	AAA	CTT	GAG	ATA	CCG	ACG	TAT	ATA	TGC	GCG	ACG	GAT	TTA	TAC	TCG	GGA	360
101	Arg	Arg	Ile	Glu	Lys	Leu	Glu	Ile	Pro	Thr	Tyr	Ile	Cys	Ala	Thr	Asp	Leu	Tyr	Ser	Gly	120
361	AGG	GCT	CTA	TAC	CTC	TCG	GAA	GGG	AGT	TTA	ATC	CCC	GCA	CTT	CTC	GGC	AGC	TGT	GCA	ATT	420
121	Arg	Ala	Leu	Tyr	Leu	Ser	Glu	Gly	Ser	Leu	Ile	Pro	Ala	Leu	Leu	Gly	Ser	Cys	Ala	Ile	140
421	CCC	GGC	ATA	TTT	GAA	CCC	GTT	GAG	TAT	AAG	AAT	TAC	TTG	CTC	GTT	GAC	GGA	GGT	ATA	GTT	480
141	Pro	Gly	Ile	Phe	Glu	Pro	Val	Glu	Tyr	Lys	Asn	Tyr	Leu	Leu	Val	Asp	Gly	Gly	Ile	Val	160
481	AAC	AAC	CTT	CCC	GTT	GAG	CCC	TTT	CAG	GAA	AGC	GGT	ATT	CCC	ACC	GTT	TGC	GTT	GAT	GTC	540
161	Asn	Asn	Leu	Pro	Val	Glu	Pro	Phe	Gln	Glu	Ser	Gly	Ile	Pro	Thr	Val	Cys	Val	Asp	Val -	180
541	CTT	CCC	ATA	GAG	CCG	GAA	AAG	GAT	ATA	AAG	AAC	ATT	CTT	CAC	ATC	CTT	TTG	AGG	AGC	TTC	600
181	Leu	Pro	Ile	Glu	Pro	Glu	Lys	Asp	Ile	Lys	Asn	Ile	Leu	His	Ile	Leu	Leu	Arg	Ser	Phe	200
601	TTT	CTT	GCG	GTC	CGC	TCA	AAC	TCC	GAA	AAG	AGA	AAG	GAG	TIT	TGT	GAC	CTC	GTT	ATA	GTT	660
201	Phe	Leu	Ala	Val	Arg	Ser	Asn	Ser	Glu	Lys	Arg	Lys	Glu	Phe	Cys	Asp	Leu	Val	Ile	Val	220
661	CCT	GAG	CTT	GAG	GAG	TTC	ACA	CCC	CTT	GAT	GTT	AGA	AAA	GCG	GAC	CAA	ATA	ATG	GAG	AGG	720
221	Pro	Glu	Leu	Glu	Glu	Phe	Thr	Pro	Leu	Asp	Val	Arg	Lys	Ala	Asp	Gln	Ile	Met	Glu	Arg	240
721 241					GCC Ala																756 252

FIGURE 5 Miltl-29L.

																					-
1	ATG Met	TTT Phe	AAT Asn	ATC Ile	AAT Asn	GTC Val	TTT Phe	GTT Val	AAT Asn	ATA Ile	TCT Ser	TGG Trp	CTG Leu	ТАТ Туг	TTT Phe	TCA Ser	GGG Gly	ATA Ile	GTT Val	ATG Met	60 20
									,												
61	AAG	ACT	GTG	GAA	GAG	TAT	GCG	CTA	CIT	GAA	ACA	GGC	GTA	AGA	GTG	TTT	TAT	CGG	TGT	GTA	120
21	Lys	Thr	Val	Glu	Glu	Tyr	АІА	Leu	ьeu.	GIU	Int.	GIA	vai	Arg	Vai	rne	-7-	,y	CYB		
												4am	mcn	CRC	CCA	uatic.	ccc	ccc	CNC	ACT.	, 180 -
121	ATC	CCG	GAG	AAA	GCT Ala	Phe	AAC	ACT	Leu	Ile	Ile	Glv	Ser	His	Gly	Leu	Gly	Ala	His	Ser	60
41	116	FIU	GIU	БүЗ	71.4							,			-					•	14_
	CCN	NTC.	TAC	אידי	AGT	GTT	GCT	GAA	GAA	ттт	GCT	AGG	CAC	GGA	TTT	GGA	TTC	TGC	ATG	CAC	240
181 61	Gly	Ile	Tyr	Ile	Ser	Val	Ala	Glu	Glu	Phe	Ala	Arg	His	Gly	Phe	Gly	Phe	Cys	Met	His	80
	_																				` -
241	GAT	CAA	AGG	GGA	CAT	GGG	AGA	ACG	GCA	AGC	GAT	AGA	GAA	AGA	GGG	TAT	GTG	GAG	GGC	TTT	300
81	Asp	Gln	Arg	Gly	His	Gly	Arg	Thr	Ala	Ser	Asp	Arg	Glu	Arg	Gly	Tyr	Val	Glu	GTA	Phe	-100
301	CAC	AAC	TTC	ATA	GAG	GAT	ATG	AAG	GCC	TTC	TCC	GAT	TAT	GCC	AAG	TGG	CGC	GTG Val	GGA	GGT	360 120
101	His	Asn	Phe	He	Glu	Asp	Met	Lys	AIA	Pne	ser	ASP	ıyı	МІО	Lys	111	AL 9		0.7	Gly	
						~~~		Ch C	».cm	n/m/*	ccc	ccc	CTTC:	חדה	aca	CTC.	מידי	מרמ	GTT	GCA.	420
361 121	GAC	GAA	ATA	ATA	TTG Leu	Leu	GGA	His	Ser	Met	Gly	Gly	Leu	Ile	Ala	Leu	Leu	Thr	-Val	Ala	140
121	лэр	010									•	-									
421	λст	ፐስጥ	מממ	GAD	ATC	GCC	AAG	GGA	GTT	ATC	GCG	CTA	GCC	CCG	GCC	CTC	CAA	ATC	CCC	TTA	480
141	Thr	Tyr	Lys	Glu	Ile	Ala	Lys	Gly	Val	Ile	Ala	Leu	Ala	Pro	Ala	Leu	Gln	Ile	Pro	Leu	160
																			-		
481	ACC	CCG	GCT	AGA	AGA	CTT	GTT	CTA	AGC	CTC	GCG	TCA	AGG	CTT	GCC	CCG	CAT	TCT	AAG	ATC	540 180
161	Thr	Pro	Ala	Arg	Arg	Leu	Val	Leu	Ser	Leu	Ala	Ser	Arg	Leu	АІа	Pro	HIS	Ser	ьys	Ile.	1.50
																		C B M	2002	C N N	600
541 181	ACC	TTA	CAA	AGG	AGA Arg	TTG	Pro	CAG Gln	Lvs	Pro	GAG	GGT	Phe	Gln	AGA	Ala	Lys	Asp	Ile	Glu	-200 ·
101	1 111	Deu	Gin	n. g	<i></i> 9				-1-						_		-	,		~. :	·:
601	<b>ፐ</b> አሮ	ስርጥ	CTG	bGT	GAA	ΑΤΑ	TCA	GTC	AAG	CTC	GTG	GAC	GAA	ATG	ATT	AAA	GCA	TCA	TCT	ATG	660
201	Tyr	Ser	Leu	Ser	Glu	Ile	Ser	Val	Lys	Leu	Val	Asp	Glu	Met	Ile	Lys	Ala	Ser	Ser	Met	220
																-					
661	TTC	TGG	ACC	ATA	GCA	GGG	GAA	ATT	AAT	ACT	ccc	GTC	CTG	CTT	ATT	CAT	GGG	GAA	AAA	GAC	720 240
221	Phe	Trp	Thr	Ile	Ala	Gly	Glu	Ile	Asn	Thr	Pro	Val	Leu	Leu	116	HIS	GIA	GIU	ъуѕ	ASD	240
																					780
721	AAT	GTC	ATA	CCT	CCG Pro	GAG	GCG	AGC	AAA	AAA	GCC	TAC	CAA Gln	TTA Leu	ATA Ile	Pro	Ser	Phe	Pro	Lys	260
241	ASII	vaı	116	210	FIO	GIU	,,,u	501	2,3	<b>.</b> , .		-1-	02							-	-
202	~~~	MAD'S	A R P	አጥኦ	TAC	ccc	GNT	Calair	GGA	CAC	AAC	TALL	لمامك	Tabah	GAD	CCA	GGC	GCG	GTG	AAA	840
781 261	GAG	Leu	Lys	Ile	Tyr	Pro	Asp	Leu	Gly	His	Asn	Leu	Phe	Phe	Glu	Pro	Gly	Ala	Val	Lys	280
–			•		-		-														
841	АТС	GTC	ACA	GAC	ATT	GTA	GAG	TGG	GTT	AAG	AAT	CTA	ccc	AGG	GAA	ААТ	CCT	TAA	8	94	•
																				,	
281	T14	va!	Thi	Ast	ıle	Val	Glu	Tre	Val	Lys	Asn	Leu	Pro	Arq	Glu	Asn	Pro	End	. 2	98	
	4.4													_							-

#### Thermococcus CL-2-30LC

								Ther	восо	ccus	CL-	2-30	LC					-			-	-
1	ATG Met	GAG Glu	GTT Val	TAC Tyr	AAG Lys	GCC Ala,	AAA Lys	TTC Phe	ĠĴλ ссс	'GAA Ģlu	GCA Ala	AAG Lys	CTC Leu	GGC Gly	TGG Trp	GTC Val	GTT Val	CTG Leu	GTT Val	CAT His	60 20	
.61 21	GGC Gly	CTC Leu	GGC Gly	GAG Glu	CAC His	AGC Ser	ĢGA Gly	AGG Arg	TAT Tyr'	GGA Gly	AGA Arg	.CTG Leu	ATT Ile	AAG Lys	GAA Glu	CTC Leu	AAC Asn	TAT Tyr	GCC Ala	GGC Gly	120 40	
121 41	TTT Phe	GGA Gly	GTT Val	TAC Tyr	ACC Thr	TTC Phe	GAC Asp	TGG Trp	CCC Pro	GGC Gly	CAC His	GGG Gly	AAG Lys	AGC Ser	CCG Pro	GGC Gly	AAG Lys	AGA Arg	GGG Gly	CAC His	180	)
181 61	ACG Thr	AGC Ser	GTC Val	GAG Glu	GAG Glu	GCG Ala	ATG Met	GAA Glu	ATC Ile	ATC Ile	GAC Asp	TCG Ser	ATA Ile	ATC Ile	GAG Glu	GAG Glu	ATC Ile	AGG Arg	GAG Glu	AAG Lys	240 80	)
241 81	CCC Pro	TTC Phe	CTC Leu	TTC Phe	GGC Gly	CAC H1s	AGC Ser	CTC Leu	GGT Gly	GGT Gly	CTA Leu	ACT Thr	GTC Val	ATC Ile	AGG Arg	TAC Tyr	GCT Ala	GAG Glu	ACG Thr	CGG Arg	300 100	
301 101	CCC Pro	GAT Asp	AAA Lys	ATA Ile	CGG Arg	GGA Gly	TTA Leu	ATA Ile	GCT Ala	TCC Ser	TCG Ser	CCT Pro	GCC Ala	CTC Leu	GCC Ala	AAG Lys	AGC Ser	CCG Pro	GAA Glu	ACG Thr	360 120	
361 121	CCG Pro	GGC Gly	TTC Phe	ATG Met	GTG Val	GCC Ala	CTC Leu	GCG Ala	AAG Lys	TTC Phe	CTT Leu	GGA Gly	AAG Lys	ATC Ile	GCC Ala	CCG Pro	GGA Gly	GTT Val	GTT Val	CTC Leu	140	
421 141	TCC Ser	AAC Asn	GGC Gly	ATA Ile	AAG Lys	CCG Pro	GAA Glu	CTC Leu	CTC Leu	TCG Ser	AGG Arg	AAC Asn	AGG Arg	GAC Asp	GCC Ala	GTG Val	AGG Arg	AGG Arg	TAC Tyr	GTT Val	480 160	•
481 161	GAA Glu	GAC Asp	CCA Pro	CTC Leu	GTC Val	CAC His	GAC Asp	AGG Arg	ATT Ile	TCG Ser	GCC Ala	AAG Lys	CTG Leu	GGA Gly	AGG Arg	AGC Ser	ATC Ile	TTC Phe	GTG Val	AAC Asn	540 180	
541 181	Met	Glu	Leu	Ala	His	Arg	Glu	Ala	Asp	Lys	Ile	Lys	Val	Pro	Ile	Leu	Leu	CTG Leu	lle	Gly	2,00	•
601 201	Thr	Gly	Asp	Val	Ile	Thr	Pro	Pro	Glu	Gly	Ser	Arg	Arg	Leu	Phe	Glu	Glu	CTG Leu	Ala	Val	660 - 220	•
661 221	Glu	Asn	Lys	Thr	Leu	Arg	Glu	Phe	Glu	Gly	Ala	Tyr	His	Glu	Ile	Phe	Glu	GAC Asp	Pro	Glu	720 240	•
721 241	TGG Trp	GCC Ala	GAG Glu	GAG Glu	TTC Phe	CAC H1S	GAA Glu	ACA Thr	ATT Ile	GTT Val	AAG Lys	TGG Trp	CTG Leu	GTT Val	GAA Glu	AAA Lys	TCG Ser	TAC Tyr	TCT Ser	TCG Ser	780 260	
781 261		CAA Gln	TAA End		89 63																	

261 Ala Gln End 263

The specific was a second of the second

#### FIGURE 7

#### Aquifex VP5-34LC

1	TTG Leu	ATT Ile	GGC Gly	AAT Asn	TTG Leu	AAA Lys	TTG Leu	AAG Lys	AGG '	TTT Phe	GAA Glu	GAG . Glu	GTT Val	AAC Asn.	TTA Leu	GTT Val	CTT Leu	TCG Ser	GGA Gly	GGĢ Gly	60 20
61	GCT	GCC	AAG	GGT	ATC	GCC	CAT	ATA	GGT	GTT	TŢA	AAA	GCT	CTG	GAA	GAG	CTC	GGT	ATA	AAG	120
21	Ala	Ala	Lys	Gly	Ile	Ala	His	Ile	Glý	Val	Léu	Lys	Ala	Leu	Glu	Glu	Leu	Gly	Ile	Lys	40
121	GTA	AAG	AGG	CTC	AGC	GGG	GTA	AGT	GCT	GGA	GCT	ATC	GTT	TCC	GTC	TTT	TAC	GCT	TCG	GGC	180
41	Val	Lys	Arg	Leu	Ser	Gly	Val	Ser	Ala	Gly	Ala	Ile	Val	Ser	Val	Phe	Tyr	Ala	Ser	Gly	60
181	TAC	ACT	CCC	GAC	GAG	ATG	TTA	AAA	CTC	CTG	AAA	GAG	GTA	AAC	TGG	CTC	AAA	CTT	TTT	AAG	240
61	Tyr	Thr	Pro	Asp	Glu	Met	Leu	Lys	Leu	Leu	Lys	Glu	Val	Asn	Trp	Leu	Lys		Phe	Lys	.80
241	TTC	AAA	ACA	CCG	AAA	ATG	GGC	TTA	ATG	GGG	TGG	GAG	AAG	GCT	GCA	GAG	TTT	TTG	GAA	AAA	300
81	Phe	Lys	Thr	Pro	Lys	Met	Gly	Leu	Met	Gly	Trp	Glu	Lys	Ala	Ala	Glu	Phe	Leu	Glu	Lys	100
301	GAG	CTC	GGA	GTT	AAG	AGG	CTG	GAA	GAC	CTG	AAC	ATA	CCA	ACC	TAT	CTT	TGC	TCG	GCG	GAT	360
101	Glu	Leu	Gly	Val	Lys	Arg	Leu	Glu	Asp	Leu	Asn	Ile	Pro	Thr	Tyr	Leu	Cys	Ser	Ala	Asp	120
361	CTG	TAC	ACG	GGA	AAG	GCT	CTT	TAC	TTC	GGC	AGA	GGT	GAC	TTA	ATT	CCC	GTG	CTT	CTC	GGA	420
121	Leu	Tyr	Thr	Gly	Lys	Ala	Leu	Tyr	Phe	Gly	Arg	Gly	Asp	Leu	Ile	Pro	Val		Leu	Gly	140
421	AGT	TGT	TCC	ATA	CCC	GGG	ATT	TTT	GAA	CCA	GTT	GAG	TAC	GAG	AAT	TTT	CTA	CTT	GTT	GAC	480
141	Ser	Cys	Ser	Ile	Pro	Gly	Ile	Phe	Glu	Pro	Val	Glu	Tyr	Glu	Asn	Phe	Leu	Leu	Val	Asp	160
481	GGA	GGT	ATA	GTG	AAC	AAC	CTG	CCC	GTA	GAA	CCT	TTG	GAA	AAG	TTC	AAA	GAA	CCC	ATA	ATC 1le	540
161	Gly	Gly	Ile	Val	Asn	Asn	Leu	Pro	Val	Glu	Pro	Leu	Glu	Lys	Phe	Lys	Glu	Pro	Ile		180
541	GGG	GTA	GAT	GTG	CTT	CCC	ATA	ACT	CAA	GAA	AGA	AAG	ATT	AAA	AAT	ATA	CTC	CAC	ATC	CTT	600
181	Gly	Val	Asp	Val	Leu	Pro	Ile	Thr	Gln	Glu	Arg	Lys	Ile	Lys	Asn	Ile	Leu	His	Ile		200
601	ATA	AGG	AGC	TTC	TTT	CTG	GCG	GTT	CGT	TCC	AAT	TCG	GAA	AAG	AGA	AAG	GAG	TTC	TGC	AAC	660
201	Ile	Arg	Ser	Phe	Phe	Leu	Ala	Val	Arg	Ser	Asn	Ser	Glu	Lys	Arg	Lys	Glu	Phe	Cys	Asn	220
661	GTA	GTT	ATA	GAA	CCT	CCC	CTT	GAA	GAG	TTC	TCT	CCT	CTG	GAC	GTA	AAT	AAG	GCG	GAC	GAG	720
221	Val	Val	Ile	Glu	Pro	Pro	Leu	Glu	Glu	Phe	Ser	Pro	Leu	Asp	Val	Asn	Lys	Ala	Asp	Glu	240
721 241	ATA Ile	TTC Phe	TGC Cys	GGG Gly	GAT Asp	ATG Met	AGA Arg	GCA Ala	CTT Leu	TAA End	7	50 50									

#### Teredimibacter - 42L

- 1	ATG	CCA	GCT	AAT	GAC	TCA	CCC	ACG	ATC	GAC	TTT	AÄT	CCT	CGC	GGC	ATT	CTT	CGC	AAC	GCT	60
1	Met	Pro	Ala	Asn	Asp	Ser	Pro	Thr	Ile	Asp	Phe	Asn	Pro	Arg	Gly	Ile	Leu	Arg	Asn	Ala	20
61	CAC	GCA	CAG	GTT	ATT	TTA	GCG	ACT	TCC	GGC	TTG	ĆGC	AAA	GCG	TTT	TTĞ	ĂAĂ	CGC	ACG	CAC	120
21	His	Ala	Gln	Val	Iļe	Leu	Ālá:	Thr	Ser	G1M	Leu	Arg	Lys	Ala	Phe	Leu	Lys	Arg	Thr	His	40
121	AAG	AGC	TAC	CTC	AGC	ACT	GCC	CAA	TGG	CTG	GAG	CTC	GAT	GCC	GGC	AAC	GGA	GTT	ACC	TTG	180
	Lys	Ser	Tyr	Leu	Ser	Thr	Ala	G1n	Trp	Leu	Glu	Leu	Asp	Ala	Gly	Asn	Glý	Val	Thr	Leu	60
181	GCC	GGA	GAG	CTT	AAC	ACA	GCG	CCT	GCA	ACT	GCA	TCC	TCC	TCC	CAC	CCG	GCG	CAC	AAG	AAC	240
	Ala	Gly	Glu	Leu	Asn	Thr	Ala	Pro	Ala	Thr	Ala	Ser	Ser	Ser	His	Pro	Ala	His	Lys	Asn	80
241	ACT	CTG	GTT	ATT	GTG	CTG	CAC	GGC	TGG	GAA	GGC	TCC	AGC	CAG	TCG	GCC	TAT	GCG	ACC	TCC	300
81	Thr	Leu	Val	Ile	Val	Leu	His	Gly	Trp	Glụ	Gly	Ser	Ser	Gln	Ser	Ala	Tyr	Ala	Thr	Ser	100
2301	GCT	GGC	AGC	ACG	CTT	TTC	GAC	AAT	GGG	TTC	GAC	ACT	TTT	CGC	CTT	AAT	TTT	CGC	GAT	CAC	360
101	Ala	Gly	Ser	Thr	Leu	Phe	Asp	Asn	Gly	Phe	Asp	Thr	Phe	Arg	Leu	Asn	Phe	Arg	Asp	His	120
361	GGC	GAC	ACC	TAC	CAC	TTA	AAC	CGC	GGC	ATA	TTT	AAC	TCA	TCG	CTG	ATT	GAC	GAA	GTA	GTG	420
121	Gly	Asp	Thr	Tyr		Leu	Asn	Arg	Gly	Ile	Phe	Asn	Ser	Ser	Leu	Ile	Asp	Glu	Val	Val	140
421	GGC	GCA	GTC	AAA	,GCC	ATC	CAG	CAG	CAA	ACC	GAC	TAC	GAC	AAG	TAT	TGC	CTG	ATG	GGG	TTC	480
141	Gly	Ala	Val	Lys	Ala	Ile	Gln	Gln	Gln	Thr	Asp	Tyr	Asp	Lys	Tyr	Cys	Leu	Met	Gly	Phe	160
481	TCA	CIG	GGT.	GGG	AAC	TTT	GCC	TTG	CGC	GTC	GCG	GTG	CGG	GAA	CAG	CAT	CTC	GCT	AAA	CCG	540
161	Ser	Leu	Gly	Gly	Asn	Phe	Ala	Leu	Arg	Val	Ala	Val	Arg	Glu	Gln	His	Leu	Ala	Lys	Pro	180
541 181	CTA Leu	GCG Ala	GGC	GTG Val	CTC	GCC Ala	GTA Val	TGC Cys	CCG Pro	GTA Val	CTC Leu	GAC Asp	Pro CCC	GCA Ala	CAC His	ACC Thr	ATG Met	ATG Met	GCC Ala	CTA Leu	600 200
601	AAC	CGA	GGT	GCG	TTT	TTC	TAC	GGC	CGC	TAT	TTT	GCG	CAT	ĀAA	TGG	AAG	CGC	TCG	TTA	ACC	660
201	Asn	Arg	Gly	Ala	Phe	Phe	Tyr	Gly	Arg	Tyr	Phe	Ala	His	Lys	Trp	Lys	Arg	Sér	Leu	Thr	220
661	GCA	AAA	CTT	GCA	GCT	TTC	CCA	GAC	TAC	AAA	TAC	GGC	AAA	GAT	TTA	AAA	TCG	ATA	CAC	ACG	720
221	Ala	Lys	Leu	Ala	Ala	Phe	Pro	Asp	Tyr	Lys	Tyr	Gly	Lys	Asp	Leu	Lys	Ser	Ile	His	Thr	240-
721	CTT	GAT	GAG	TTA	AAC	AAC	TAT	TTC	ATT	CCC	CGC	TAC	ACC	GGC	TTC	AAC	TCA	GTC	TCC	GAA	780
241	Leu	Asp	Glu	Leu	Asn	Asn	Tyr	Phe	11e	Pro	Arg	Tyr	Thr	Gly	Phe	Asn	Ser	Val	Ser	Glu	260
781 261	TAC Tyr	TTC Phe	AAA Lys	AGT Ser	TAC Tyr	ACG Thr	CTC Leu	ACC Thr	GGG Gly	CAG Gln	AAG Lys	CTC Leu	GCG Ala	TTT Phe	CTC Leu	AAC Asn	TGC Cys	CCC	AGT Ser		840 280
841	ATT	CTG	GCA	GCT	GGC	GAC	GAC	CCA	ATA	ATT	CCA	GCA	TCC	GAC	TTT	CAG	AAA	ATA	GCC	AAG	900
-281	Ile	Leu	Ala	Ala	Gly	Asp	Asp	Pro	Ile		Pro	Ala	Ser	Asp	Phe	Gln	Lys	Ile	Ala	Lys	300
901 301	CCT Pro	GCG Ala	AAT Asn	CTG Leu	CAC His	ATA Ile	ACA Thr	GTA Val	ACG Thr	CAA Gln	CAA Gln	GGT Gly	TCT	CAT	TGC Cys	GCA Ala	TAC	CTG Leu	ĞAA Glu	AAC Asn	960 320
961 321	CTG Leu	CAT His	Lys	CCT	AGT Ser	GCT Ala	GCC Ala	GAC Asp	AAA Lys	TAT Tyr	GCG	GTG Val	AAA Lys	TTA Leu	TTT	GGA Gly	GCC	TGT Cys	TGA End	101 339	

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#### RIGURE 9

#### Archeoglobus fulgidas VC16 - 16MC1

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ATG CTT GAT ATG CCA ATC GAC CCT GTT TAC TAC CAG CTT GCT GAG TAT
Met Leu Asp Met Pro Ile Asp Pro Val Tyr Tyr Gln Leu Ala Glu Tyr

1 5. 16 10 15 \$ 15. TTC GAC AGT CTG CCG PAD TTC GAC CAG TIT TCC TCG GCC AGA GAG TAC
Phe Asp Ser Leu Pro Lys Phe Asp GLn Phe Ser Ser Ala Arg Glu Tyr
20 25 30 AGG GAG GCG ATA AAT CGA ATA TAC GAG GAG AGA AAC CGG CAG CTG AGC
Arg Glu Ala Ile Asn Arg Ile Tyr Glu Glu Arg Asn Arg Gln Leu Ser
35 40 CAG CAT GAG AGG GTT GAA AGA GTT GAG GAC AGG ACG ATT AAG GGG AGG Gln His Glu Arg Val Glu Arg Val Glu Asp Arg Thr Ile Lys Gly Arg 50 55 - 60 AAC GGA GAC ATC AGA GTC AGA GTT TAC CAG CAG AAG CCC GAT TCC CCG Asn Gly Asp Ile Arg Val Arg Val Tyr Gln Gln Lys Pro Asp Ser Pro 65 70 75 80 GGT CTG GTT TAC TAT CAC GGT GGT GGA TIT GTG ATT TGC AGC ATC GAG Val Leu Val Tyr Tyr His Gly Gly Gly Phe Val Ile Cys Ser Ile Glu 85 90 95 TCG CAC GAC GCC TTA TGC AGG AGA AYY GCG AGA CTT TCA AAC TCT ACC Ser HIs Asp Ala Leu Cys Arg Arg Ile Ala Arg Leu Ser Asn Ser Thr 100 105 110 GTA GTC TCC GTG GAT TAC AGG CTC GCT CCT GAG CAC AAG TTT CCC CCC Val Val Ser Val Asp Tyr Arg Leu Ala Pro Glu His Lys Phe Pro Ala 115 CCA GTT TAT CAT TGC TAC GAT GCG ACC AAG TGG GTT GCT GAG AAC CGG
Ala Val Tyr Asp Cys Tyr Aso Ala Thr Lys Trp Val Ala Glu Asn Ala
130 135 140 GAG GAG CTG AGG ATT GAC CCG TCA AAA ATC TTC GTT GGG GGG GAC AGT Glu Glu Leu Arg Ile Asp Pro Ser Lys Ile Phe Val Gly Gly Asp Ser 150 155 160 GCG GGA CGG AAT CTT GCC CCG GCG CTT TCA ATA ATG GCG AGA GAC AGC Ala Gly Gly Asn Leu Ala Ala Ala Val Ser Ile Met Ala Arg Asp Ser 165 GGA GAA GAT TTC ATA AAG CAT CAA ATT CTA ACT TAC CCC GTT GTG AAC Gly Glu Asp Phe Ile Lys His Gln Ile Leu Ile Tyr Pro Val Val Asn 180 TTT GTA GCC CCC ACA CCA TCG CTT CTG GAG TTT GGA GAG GGG CTG TGG
Phe Val Ala Pro Thr Pro Ser Leu Leu Glu Phe GLy Glu Gly Leu Trp
195 \ 200 \ 205 ATT CTC GAC CAG AAG ATA ATG AGT TGG TTC TCG GAG CAG TAC TTC TCC Ile Leu Asp Gln Lys Ile Met Ser Trp Phe Ser Glu Gln Tyr Phe Ser 210 215 230 . AGA GAG GAA GAT AAG TTC AAG CCC CTC GCC TCC GTA ATC TTT GCG GAC Arg Glu Glu Aso Lys Phe Asn Pro Leu Ala Ser Val 1le Phe Ala Asp 235 240 250 CTT GAG AAC CTA CCT CCT GCG CTG ATC ATA ACC GCC GAA TAC GAC CCG Leu Glu Asn Leu Pro Pro Ala Leu Ile Ile Thr Ala Glu Tyr Asp Pro 255 260 265 CTG AGA GAT GAA GGA GAA GTT TTC GGG CAG ATG CTG AGA AGA GCC GGT Leu Arg Asp Glu Glu Val Phe Gly Gln Met Leu Arg Arg Ala Gly 270 275 280 GTT GAG GCG AGC ATC GTC AGA TAC AGA GGC GTG CTT CAC GGA TTC ATC Val Glu Ala Ser Ile Val Arg Tyr Arg Gly Val Leu His Gly Phe Ile 285 290 295 AAT TAC TAT CCC GTG CTG AAG GCT GCG AGG GAT GCG ATA AAC CAG ATT Asn Tyr Tyr Pro Val Leu Lys Ala Ala Arg Asp Ala Ile Asn Gln Ile 300 305 310

GCC GCT CTT CTT GTG TTC GAC TAG Ala Ala Leu leu Val Phe Asp 315 320

三次500 多数300 400 400

#### PIGURE 10

#### Sulfolobus Solfataricus Pl - 8LC1

ATG CCC CTA GAT CCT AGA ATT AAA AAG TTA CTA GAA TCA GCT CTT ACT Met Pro Leu Asp Pro Arg Ilê Lys Lys Leu Leu Glu Ser Ala Leu Thr 1 5 10 15 ATA CCA ATT GGT AAA GCC CCA GTA GAA GAG GTA AGA AGA ATA TTT AGG Ile Pro Ile Gly Lys Ala Pro Val Glu Glu Val Arg Lys Ile Phe Arg 20 25 30 CAA TTA GCG TCG GCA GCT CCC AAA GTC GAA GTT GGA AAA GTA GAA GAT Gln Leu Ala Ser Ala Ala Pro Lys Val Glu Val Gly Lys Val Glu Asp 35 40 45 ATA AAA ATA CCA GGC AGT GAA ACC GTT ATA AAC GCT AGA GTG TAT TTT
Ile Lys Ile Pro Gly Ser Glu Thr Val Ile Asn Ala Arg Val Tyr Phe
50 55 60 CCG AAG AGT AGC GGT CCT TAT GGT GTT CTA GTG TAT CTT CAT GGA GGC Pro Lys Ser Ser Gly Pro Tyr Gly Val Leu Val Tyr Leu His Gly Gly 65 70 75 80 GGT TTT GTA ATA GGC GAT GTG GAA TCT TAT GAC CCA TTA TGT AGA GCA
Gly Phe Val Ile Gly Asp Val Glu Ser Tyr Asp Pro Leu Cys Arg Ala
85 90 95 ATT ACA AAT GCG TGC AAT TGC GTT GTA GTA TCA GTG GAC TAT AGG TTA Ile Thr Asn Ala Cys Asn Cys Val Val Val Ser Val Asp Tyr Arg Leu 100 105 110 GCT CCA GAA TAC AAG TTT CCT TCT GCA GTT ATC GAT TCA TTT GAC GCT Ala Pro Glu Tyr Lys Phe Pro Ser Ala Val Ile Asp Ser Phe Asp Ala 115 120 125 ACT AAT TGG GTT TAT AAC AAT TTA GAT AAA TTT GAT GGA AAG ATG  $\bar{G}GA$  Thr Asn Trp Val Tyr Asn Asn Leu Asp Lys Phe Asp Gly Lys Met Gly 130 GTT GCG ATT GCG GGA GAT AGT GCT GGA GGA AAT TTG GCA GCG GTT GTA Val Ala Ile Ala Gly Asp Ser Ale Gly Gly Asn Leu Ala Ala Val Val 145 150 160 GCT CTT CTT TCA AAG GGT AAA ATT AAT TTG AAG TAT CAA ATA CTG GTT Ala Leu Leu Ser Lys Gly Lys Ile Asn Leu Lys Tyr Gln Ile Leu Val 165 170 175 TAC CCA GCG GTA AGT TTA GAT AAC GTT TCA AGA TCC ATG ATA GAG TAC
Tyr Pro Ala Val Ser Leu Asp Asn Val Ser Arg Ser Met Ile Glu Tyr
180 185 190 TCT GAT GGG TTC TTC CTT ACC AGA GAG CAT ATA GAG TGG TTC GGT TCT Ser Asp Gly Phe Phe Leu Thr Arg Glu His Ile Glu Trp Phe Gly Ser 195 200 205 CAA TAC TTA CGA AGC CCT GCA GAT TTG CTA GAC TTT AGG TTC TCT CCA
Gln Tyr Leu Arg Ser Pro Ala Asp Leu Leu Asp Phe Arg Phe Ser Pro
210 215 220 ATT CTG GCG CAA GAT TTC AAC GGA TTA CCT CCA GCC TTG ATA ATA ACA Ile Leu Ala Gln Asp Phe Asn Gly Leu Pro Pro Ala Leu Ile Ile Thr 225 230 240 GCA GAA TAC GAT CCA CTA AGG GAT CAA GGA GAA GCG TAT GCA AAT AAA Ala Glu Tyr Asp Pro Leu Arg Asp Gln Gly Glu Ala Tyr Ala Asn Lys 245 250 255 CTA CTA GCT GGA GTC TCA GTT ACT AGT GTG AGA TTT AAC AAC GTT Leu Leu Gln Ala Gly Val Ser Val Thr Ser Val Arg Phe Asn Asn Val 260 265 270 ATA CAC GGA TTC CTC TCA TTC TTT CCG TTG ATG GAG CAA GGA AGA GAT Ile His Gly Phe Leu Ser Phe Phe Pro Leu Met Glu Gln Gly Arg Asp 275 280 285

GCT ATA GGT CTG ATA GGG TCT GTG TTA AGA CGA GTA TTT TAT GAT AAA Ala Ile Gly Leu Ile Gly Ser Val Leu Arg Arg Val Phe Tyr Asp Lys 290 295 300

ATT TAA

Ile